GENERAL

This appendix provides performance, interface, and cost information for NASA-procured expendable launch services. NASA-procured launch services used for Earth Science mission payloads are governed by NASA Policy Directives (NPD) 8610.7 and 8610.23A, which can be found at the following sites:

http://nodis.hq.nasa.gov/Library/Directives/NASA-WIDE/Policies/Program_Management/N_PD_8610_7.html

http://nodis.hq.nasa.gov/Library/Directives/NASA-WIDE/Policies/Program_Management/N_PD_8610_23A.html

Proposed missions in response to this AO shall use a dedicated launch vehicle. Following Phase B down select, NASA will assess the potential for shared ride opportunities. With respect to international cooperatives, NASA will provide the launch service; no foreign launch vehicles will be considered.

LAUNCH VEHICLES

The NASA-procured Launch Vehicles for this AO are provided on the Small Expendable Launch Vehicle Services (SELVS-KSC) Contract. These three launch vehicles (LV) include Taurus 2210 (93" payload fairing), Taurus 2110 (63" payload fairing), and Pegasus XL. A SELVS-KSC payload planner' s guide is not readily available; however, for questions, contact KSC ELV Launch Services (see below).

Figure D-1 depicts the payload mass capabilities of the selected SELVS-KSC LVs for low-earth circular orbits at 28.5° and Sun-Synchronous inclinations.

Figures D-2 and D-3 show the payload envelopes available for the Taurus and Pegasus XL LVs.

Figure D-4 depicts a typical timeline of mission integration activities. The standard launch services includes the basic engineering and analyses for the LV integration and mission unique requirements as well as post-flight data evaluation. NASA provides the technical insight and approval activities, mission integration management, launch site processing, telemetry support for the launch phases, launch day management, and launch service contract/budget administration.

Table D-1 shows the cost per fiscal year for the entire launch service. Included in these figures are cost for the launch vehicle, a nominal allocation for mission unique requirements, LV telemetry support, and launch site processing. These estimates are in real year dollars assuming a launch in October 2005. Any cost penalties associated with payload caused launch delays are not included in these estimates.

Any additional information regarding NASA-procured launch services, please contact:

Darrell Foster
NASA/KSC/ELV Mission Management Office
Mail code: VB-C
Kennedy Space Center, FL 32899
phone: 321-476-3622
email: darrell.foster-1@ksc.nasa.gov

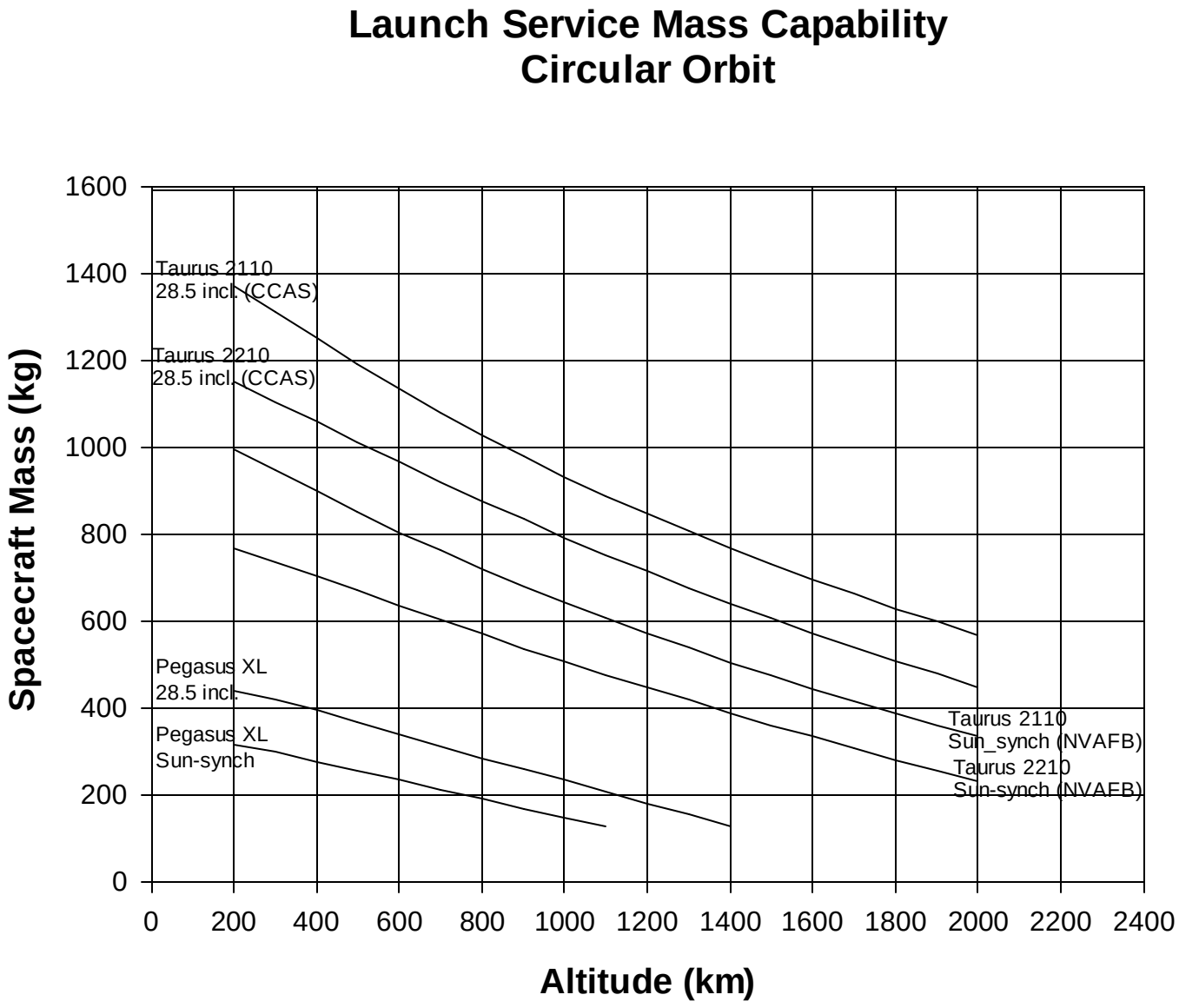

Figure D-1 – SELVS-KSC LV performance curves

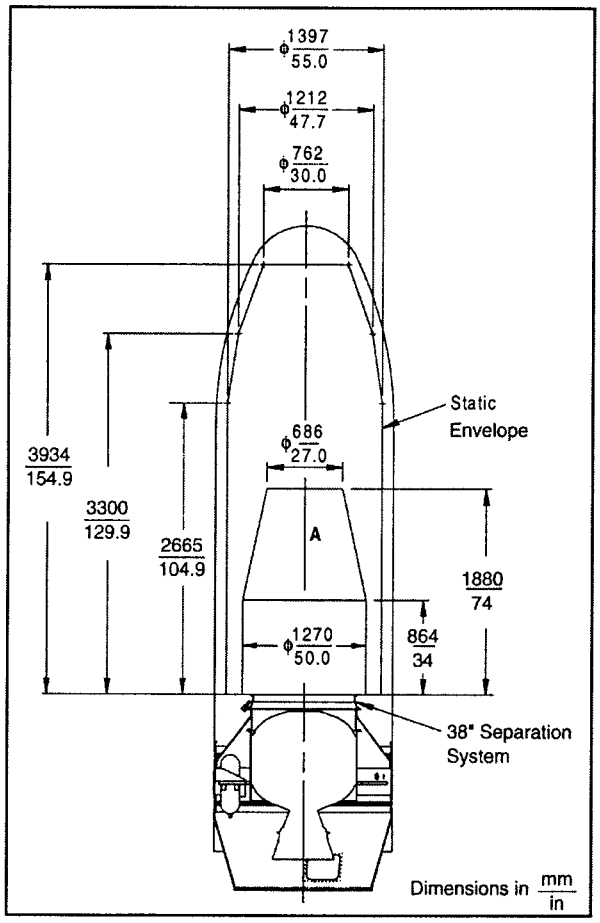

Figure B-4. Taurus 2110 63" Payload Fairing Static Envelope with 38.810" Diameter Payload Interface

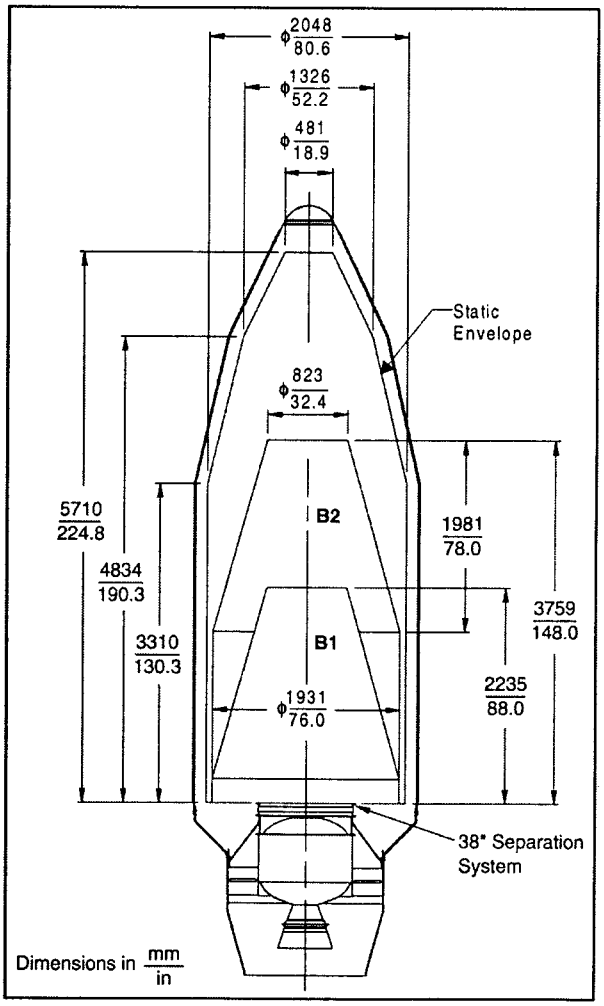

Figure B-5. Taurus 2210 92" Payload Fairing Static Envelope with 38.810" Diameter Payload Interface

Figure D-2 - Taurus Payload Fairing Envelopes

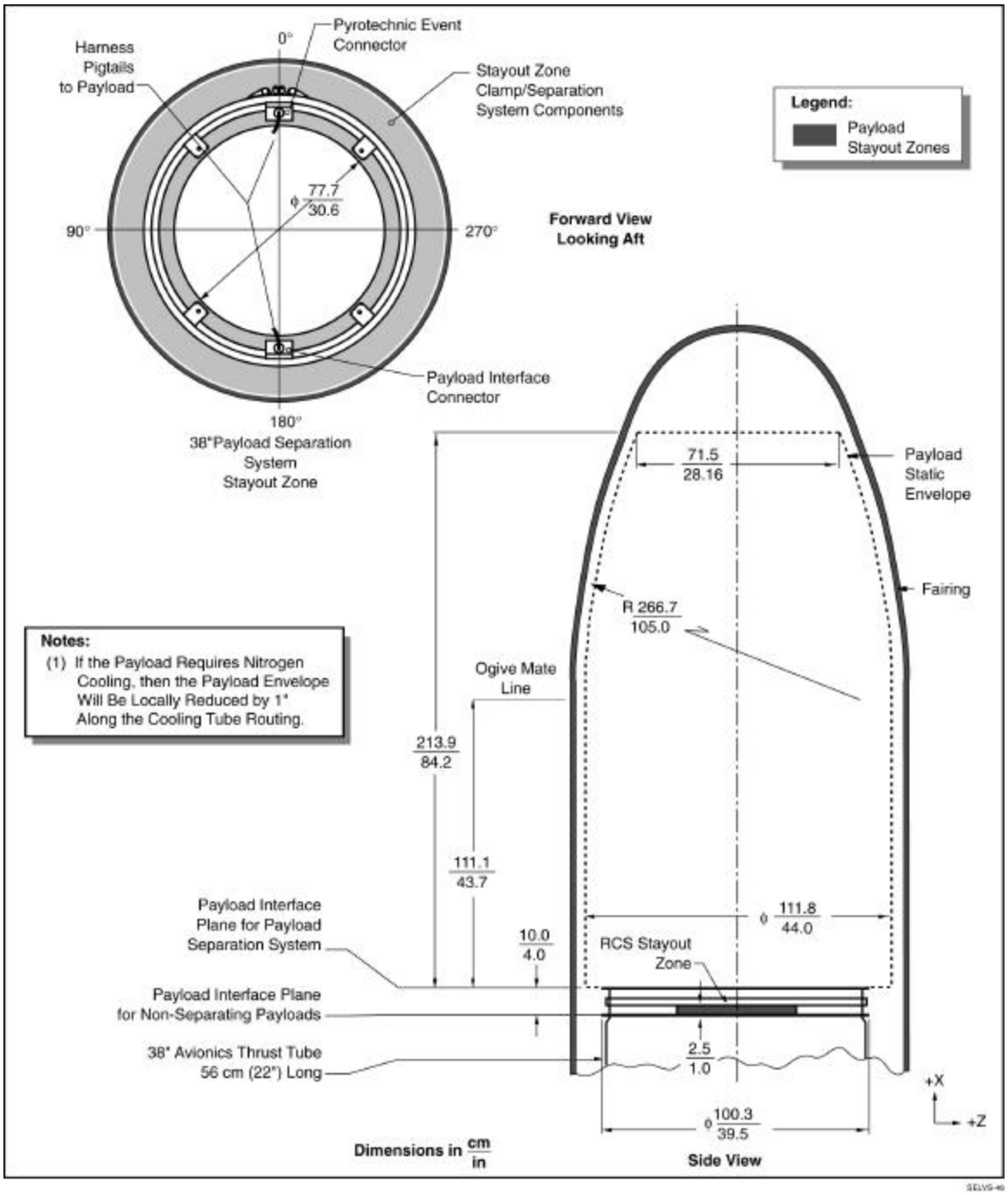

Figure D-3 – Pegasus XL Payload Fairing Envelopes

Agency	Milestones	Weeks 100 90 80 70 60 50 40 30 20 10 0
Spacecraft	Spacecraft Questionnaire	Δ L-104 ... Δ Launch
Spacecraft	Spacecraft Dynamics Mathematical Model	Δ L-90 Initial ... Δ L-48 Final
Spacecraft	Spacecraft Environ. Test Document	Δ L-84
Launch Vehicle	LV-SC Interface Control Document	Δ L-84 Initial
Spacecraft	Spacecraft Drawings	Δ L-78 Initial ... Δ L-44 Final
Launch Vehicle	Coupled Dynamic Loads Analysis	Δ L-68 Initial ... Δ L-26 Final
Spacecraft	Pre-Launch Safety Package	Δ L-58
Spacecraft	Mission Analysis Inputs	Δ L-54 Prelim Δ L-38 Final
Spacecraft	S/C Program Requirements Doc.	Δ L-52
Launch Vehicle	Mission Analysis Report	Δ L-44 Pre Δ L-28 Final
Spacecraft	Spacecraft Launch Site Procedures	Δ L-18

Figure D-4 – Typical Mission integration Timeline

	FY' 03	FY' 04	FY' 05	FY' 06	Total
Pegasus XL	**$1.0**	**$16.4**	**$9.6**	**$2.3**	**$29.3**
Taurus 2110	**$1.0**	**$28.6**	**$16.1**	**$3.4**	**$49.1**
Taurus 2210	**$1.0**	**$28.6**	**$16.1**	**$3.4**	**$49.1**

Note: Included in these figures are cost for the launch vehicle, a nominal allocation for mission unique requirements, LV telemetry support, and launch site processing. These estimates are in real year dollars assuming a launch in October 2005. Any cost penalties associated with payload caused launch delays are not included in these estimates.